TB Elimination

The Difference Between Latent TB Infection and Active TB Disease

What Is TB?

Tuberculosis (TB) is a disease caused by a germ called *Mycobacterium tuberculosis* that is spread from person to person through the air. TB usually affects the lungs, but it can also affect other parts of the body, such as the brain, the kidneys, or the spine. When a person with infectious TB coughs or sneezes, droplet nuclei containing *M. tuberculosis* are expelled into the air. If another person inhales air containing these droplet nuclei, he or she may become infected. However, not everyone infected with TB bacteria becomes sick. As a result, two TB-related conditions exist: latent TB infection and active TB disease.

A person with latent TB infection (LTBI)
Usually has a skin test or blood test result indicating TB infection
Has a normal chest x-ray and a negative sputum test
Has TB bacteria in his/her body that are alive, but inactive
Does not feel sick
Cannot spread TB bacteria to others
Needs treatment for latent TB infection to prevent TB disease; however, if exposed and infected by a person with multidrug-resistant TB (MDR TB) or extensively drug-resistant TB (XDR TB), preventive treatment may not be an option

What Is Latent TB Infection?

Persons with latent TB infection do not feel sick and do not have any symptoms. They are infected with *M. tuberculosis*, but do not have active TB disease. The only sign of TB infection is a positive reaction to the tuberculin skin test or special TB blood test. **Persons with latent TB infection are not infectious and cannot spread TB infection to others.**

Overall, about 5 to 10% of infected persons will develop active TB disease at some time in their lives. About half of those people who develop active TB will do so within the first two years of infection. For persons whose immune systems are weak, especially those with HIV infection, the risk of developing active TB disease is considerably higher than for persons with normal immune systems.

Of special concern are persons infected by someone with extensively drug-resistant TB (XDR TB) who later develop active TB disease; these persons will have XDR TB, not regular TB disease.

What Is Active TB Disease?

In some people, TB bacteria overcome the defenses of the immune system and begin to multiply, resulting in the progression from latent TB infection to active TB disease. Some people develop active TB disease soon after infection, while others develop active TB disease later when their immune system becomes weak.

The general symptoms of active TB disease include

- Unexplained weight loss
- Loss of appetite
- Night sweats
- Fever
- Fatigue
- Chills

What Is Active TB Disease? (cont.)

The symptoms of TB of the lungs include

- Coughing for 3 weeks or longer
- Hemoptysis (coughing up blood)
- Chest pain

Other symptoms depend on the part of the body that is affected.

Persons with active TB disease are considered infectious and may spread TB bacteria to others. If TB disease is suspected, persons should be referred for a complete medical evaluation. If it is determined that a person has active TB disease, therapy is given to treat it. TB disease is a serious condition and can lead to death if not treated.

A person with active TB disease
Usually has a skin test or blood test result indicating TB infection
May have an abnormal chest x-ray, or positive sputum smear or culture
Has active TB bacteria in his/her body
Usually feels sick and may have symptoms such as coughing, fever, and weight loss
May spread TB bacteria to others
Needs treatment to treat active TB disease

Additional Information

American Thoracic Society (ATS) and CDC. Diagnostic standards and classification of tuberculosis in adults and children. (PDF) *Am J Respir Crit Care Med* 2000; 161. http://ajrccm.atsjournals.org/cgi/content/full/161/4/1376

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